# Project Descriptions for December 6, 2017

# Board of Trustees Meeting

## Clean Water Commitments

**Easton CW-16-33**
The Town of Easton completed a Comprehensive Wastewater Management Plan, which identified the Easton Center Needs Area, as a priority sewer area. This area includes Washington St. (Route 123/138) from the intersection of Derby St. northwest to and including the Queset Commons development site. This is an area with documented on-site wastewater issues, as well as an area of economic development for the Town. Queset Commons will have a privately owned and operated Wastewater Treatment Facility (WWTF) to be constructed by the developer. The developer agreed to provide the Town with 50,000 gallons if capacity at the WWTF to serve users in Easton Center.

**Essex CWT-17-31**
Community Septic Management Program

**Fall River CW-17-21**
The City is under federal court order to control its combined sewer overflows (CSOs) to its receiving waters. This program, known as the Fall River CSO Abatement Program, is intended to provide a 3-month storm level of control. Discharges from two CSO outfalls, Alton Street and City Pier, have not yet been controlled. Additionally, the City Pier area experiences chronic street flooding in low-lying areas. The proposed facilities plan will advance previous planning efforts for sewer separation of the areas tributary to these outfalls, as well as address flooding issues. The result will be a conceptual design for sewer separation and flood control in these areas.

**Fall River CW-17-22**
The Department of Community Utilities intends to prepare a wastewater treatment facilities plan. Its existing WWTF is at/near the end of its useful life. Buildings and equipment need full rehabilitation due to age and harsh environment.
Additionally, Fall River WWTF's NPDES permit is in the renewal process. EPA intends to include nitrogen removal requirements and an implementation schedule in its forthcoming draft permit. Nitrogen removal cannot be easily accomplished with the existing oxygen- activated sludge process and limited site area. Alternatives to incorporate nitrogen removal must be fully evaluated. In addition, the WWTF's incinerator was required to shut down in March 2016, and alternative solids handling and disposal must be evaluated.

**Gardner CW-17-23**
Removal of two existing belt filter presses and replacement with two centrifuges. The project will include structural upgrades to the building, replacement of the polymer feed system and other ancillary support equipment including piping and pumps. These upgrades will provide operational efficiency leading to cost savings and better wastewater treatment.

**Gloucester CW-17-25**
The City of Gloucester will be generating a Utility Master Plan for comprehensive wastewater and stormwater systems asset management. The City plans to use the assessment and master plans to verify asset conditions as the basis for management decisions, establishment of priority upgrades, and compliance with wastewater and stormwater NPDES requirements, and protect public and environmental health by reducing Sanitary Sewer Overflows (SSOs) at the wastewater treatment plant and pump stations and minimize any treatment bypasses. The City will use the master plans to prioritize, plan and execute, necessary capital projects and plan for future upgrades.

**MWRA CW-16-42**
The Caruso Pump Station Improvements Project is one of four critical wastewater system improvements projects that MWRA has identified for 2015. The purpose of the Caruso Pump Station Improvements Project is to replace the standby power generator system and to improve the HVAC, fire detection/suppression, and security systems in order to significantly improve the pump station reliability, operations, safety and efficiency.

**MWRA CW-16-43**
This project includes upgrades to the Deer Island Wastewater Treatment Plant automation and central control systems as well as improvements and upgrades to several existing interceptors and pump stations that are in need of replacement and/or modernization. The project is intended to extend current asset life and improve system operability.

**Nantucket CW-17-20**
Several Inflow and Infiltration (I/I) projects that were part of the '04 Capital Improvement Plans (CIP) recommended in a 2003 I/I study have been completed. In that study, review of '03 CCTV records identified areas for repair, and inflow data was used to pinpoint sources of I/I. The current Sewer System I/I and Metering Program is warranted to update 2003 data to properly identify future work, and project accurate costs to enable planning.

**New Bedford CW-17-16**
The pumping station upgrades involved in this project are for three pumping stations in the City of New Bedford that are high priority for the near future. These recommendations are based on an Integrated Plan currently being developed. Upgrades are necessary to ensure adequate system capacity and effective wastewater treatment.

**New Bedford CW-17-17**
The Wastewater Collection System Improvements project includes several improvements to the City's infrastructure. Projects include an interceptor and collector sewer rehabilitation program, a lateral sewer rehabilitation program, an illicit discharge removal program, and an over-under access manhole program. The progression of these programs will further the City’s progressive efforts to dramatically lessen or eliminate Infiltration/Inflow (I/I) issues, reduce CSOs, reinforce the critical components of the city's sewer system, address Capacity, Management, Operations and Maintenance (CMOM) and regulatory requirements, and eliminate illicit discharges. These programs will address needs identified in the City's Integrated Plan.

# Drinking Water Commitments

**Brockton DW-17-05**
The City of Brockton will assess the infrastructure conditions within the 24-inch transmission mains. The city had major difficulty isolating a break in this area in 2015. Several valves are in need of replacement, according to a recent valve testing field assignment conducted by the City. The study indicates that these lines are also likely to be in poor condition. A transmission main inspection is necessary to develop recommendations for transmission main improvements in order to prevent future water loss and extreme breaks, such as the 2015 incident.

**Fall River DW-17-12**
This project will allow the City to implement an "Advance Meter Infrastructure" (AMI). The AMI system will allow the City to remove meter reading vehicles from the street, along with vehicle overhead, emissions and safety issues. Personnel costs and meter reading errors can be controlled with precise daily and hourly meter reads. Combined with the replacement of commercial and industrial meters, the project will enhance the water department's revenue, streamline office procedures, provide the means for continued investment. The AMI system offers leak detection notification, which in turn leads to water conservation and less pumping costs. Rate payers will be better served, and at the same time the department becomes more efficient.

**New Bedford DW-17-06**
This Large Meter and Advanced Metering Infrastructure (AMI) Upgrade Program includes two distinct but related elements: (1) The City will conduct testing, repair, and/or replacement of some of its largest consumer meters. These meters are older and are under registering, leading to increased unaccounted- for water and decreased revenue. (2) The City will upgrade its meter reading equipment for the entire water system, to apply the latest technology and eliminate the current high frequency of estimated meter reads (and therefore reduce unaccounted for water and lost revenues) due to failing Meter Transmission Units (MTUs).

**New Bedford DW-17-07**
The High Hill Reservoir Rehabilitation project will perform much needed and required structural repairs to the reservoir and its roof, replace inoperable inlet and outlet valves, clean the entire reservoir, remove accumulated sediment on the reservoir floor, install a new mixing system in the reservoir to improve circulation and water age, and perform other needed repairs and upgrades. Recent inspections identified serious deficiencies with the reservoir's roof and support system, including failed beam connections, broken anchor bolts, and beams that have moved on their supports. The roof is in danger of failure and collapse, and inoperable inlet and outlet valves that need to be replaced. This work will improve water quality and ensure reliability and flow capacity in the distribution system.

# Clean Water Agreements

**Chatham CWT-13-10-A**
This sewer Collection System Extension and Improvement Project will address nitrogen loading concerns by further extending the wastewater collection system. This project is the third phase of implementing nitrogen mitigation efforts that began in 2010. The project will include sewering additional sections of Chatham and constructing two pump stations capable of handling a total of 68,000 gpd of sewage.

**Easton CW-16-33**
The Town of Easton completed a Comprehensive Wastewater Management Plan, which identified the Easton Center Needs Area, as a priority sewer area. This area includes Washington St. (Route 123/138) from the intersection of Derby St. northwest to and including the Queset Commons development site. This is an area with documented on-site wastewater issues, as well as an area of economic development for the Town. Queset Commons will have a privately owned and operated Wastewater Treatment Facility (WWTF) to be constructed by the developer. The developer agreed to provide the Town with 50,000 gallons if capacity at the WWTF to serve users in Easton Center.

**Essex CWT-17-31**
Community Septic Management Program

**Fall River CW-17-21**
The City is under federal court order to control its combined sewer overflows (CSOs) to its receiving waters. This program, known as the Fall River CSO Abatement Program, is intended to provide a 3-month storm level of control. Discharges from two CSO outfalls, Alton Street and City Pier, have not yet been controlled. Additionally, the City Pier area experiences chronic street flooding in low-lying areas. The proposed facilities plan will advance previous planning efforts for sewer separation of the areas tributary to these outfalls, as well as address flooding issues. The result will be a conceptual design for sewer separation and flood control in these areas.

**Fall River CW-17-22**
The Department of Community Utilities intends to prepare a wastewater treatment facilities plan. Its existing WWTF is at/near the end of its useful life. Buildings and equipment need full rehabilitation due to age and harsh environment. Additionally, Fall River WWTF's NPDES permit is in the renewal process. EPA intends to include nitrogen removal requirements and an implementation schedule in its forthcoming draft permit. Nitrogen removal cannot be easily accomplished with the existing oxygen- activated sludge process and limited site area. Alternatives to incorporate nitrogen removal must be fully evaluated. In addition, the WWTF's incinerator was required to shut down in March 2016, and alternative solids handling and disposal must be evaluated.

**Gloucester CW-17-25**
The City of Gloucester will be generating a Utility Master Plan for comprehensive wastewater and stormwater systems asset management. The City plans to use the assessment and master plans to verify asset conditions as the basis for management decisions, establishment of priority upgrades, and compliance with wastewater and stormwater NPDES requirements, and protect public and environmental health by reducing Sanitary Sewer Overflows (SSOs) at the wastewater treatment plant and pump stations and minimize any treatment bypasses. The City will use the master plans to prioritize, plan and execute, necessary capital projects and plan for future upgrades.

**MWRA CW-16-42**
The Caruso Pump Station Improvements Project is one of four critical wastewater system improvements projects that MWRA has identified for 2015. The purpose of the Caruso Pump Station Improvements Project is to replace the standby power generator system and to improve the HVAC, fire detection/suppression, and security systems in order to significantly improve the pump station reliability, operations, safety and efficiency.

**MWRA CW-16-43**
This project includes upgrades to the Deer Island Wastewater Treatment Plant automation and central control systems as well as improvements and upgrades to several existing interceptors and pump stations that are in need of replacement and/or modernization. The project is intended to extend current asset life and improve system operability.

## Drinking Water Agreements

**Brockton DW-17-05**
The City of Brockton will assess the infrastructure conditions within the 24-inch transmission mains. The city had major difficulty isolating a break in this area in 2015. Several valves need replacement, according to a recent valve testing field assignment conducted by the City. The study indicates that these lines are also likely to be in poor condition. A transmission main inspection is necessary to develop recommendations for transmission main improvements to prevent future water loss and extreme breaks, such as the 2015 incident.

**Eastham DW-16-16**
This project consists of constructing a town-wide water system, the core of which is under construction as Phase 1. In this Phase 2, the town will construct the remainder of the distribution system such that every property in Town has the ability to connect to the water system. Contract 2A of this Phase will consist of installing the District H well field and approximately 19 miles of distribution system piping, extending the availability of public water to more areas of town.

**MWRA DW-16-06**
The Southern Extra High service area has been identified as being deficient in distribution storage and lacking redundant distribution pipelines. Correction of these deficiencies has been assigned a Priority One under MWRA's 2006 and 2013 Water System Master Plans due to the potential critical threat to public health that could result from a failure in this single transmission main.

**MWRA DW-16-23**
This project is for the construction of a 20-million-gallon potable water storage tank in the Town of Stoneham at its terminal reservoir at the northeastern extremity of the MWRA water service to metropolitan Boston. The project will provide improved storage (16-20 million gallons) but will also provide surge relief, protecting MWRA and community mains; allow more efficient use of the existing MWRA distribution system; and, provide emergency backup to 21 communities in the Northern Intermediate High and Northern High systems.